PROCESSES AND PROPERTIES INDEX

A-4

Determination of manganese in plants. P. A. Vlasiuk and V. J. Germaja (Compt. rend. Acad. Sci. U.R.S.S., 1940, 28, 154—156).—2—3 g. of substance are ignited first at low temp., then in a furnace until an almost colourless ash remains. This is dissolved in 10 c.c. of conc. HNO_3. Cl' is removed by adding 10 c.c. of $0.2N$-$AgNO_3$, and Mn in the boiling solution is converted into MnO_4' by addition of approx. 1 g. of $(NH_4)_2S_2O_8$. The colour of the solution is then compared with that of a standard. W. McC.

A.S.M.–S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

VLASKALIN, Aleksandr

    Port warehouses and their business activities. Medun transp
    9 no.12:787-790   D '63

TEODOSIEVSKI, D.; VLASKI, R.

.Epidemiological and clinical characteristics of miliary tubercu-
losis based on the material of the Skopije Pediatric Clinic.
Tuberkuloza 15 no.1:116-119 Ja-Mr '63.

1. Klinika za decje bolesti Medicinskog fakulteta, Skopje.
            (TUBERCULOSIS IN CHILDHOOD)
            (TUBERCULOSIS, MILIARY)
                (STATISTICS)

VLASKIN, B.G.; SHTEYN, V.M.

Measurement of pulse characteristics of nonlinear four-terminal
networks. Elektrosviaz' 14 no.9:68-71 S '60.
                                          (MIRA 13:9)
        (Transistors)   (Pulse techniques (Electronics))

VLASKIN, F.S.

ACHERKAN, N.S.; YERMAKOV,V.V.; IGNAT'YEV, N.V.; KAUFMAN, L.M.; PUSH, V.E.;
    FEDOTENOK, A.A.; KHARIZOMENOV, I.V.; KHRYKOZ, A.N.; VLASKIN, F.S.;
    kandidat tekhnicheskikh nauk, dotsent; GANDLER, A.V.; kandidat
    tekhnicheskikh nauk, dotsent; ALEKSEYEV, P.G., kandidat tekhni-
    cheskikh nauk.

"Machine tools" by V.A.Bravichev and others. Reviewed by N.S.
Acherkan and others. Vest.mash. 37 no.5:87-91 My '57.   (MLRA 10:5)

1.Kafedra "Metallorezhushchiye stanki" Moskovskogo stankoinstrumen-
tal'nogo instituta (Acherkan, Yermakov, Ignat'yev, Kaufman, Push,
Fedotenok, Kharizomenov, Khrykoz)
                            (Machine tools)

(L 56084-65   EWP(z)/EWA(c)/EWT(m)/EWP(b)/T-EWA(h)/EWP(w)/EWP(t)   HJW/JD

ACCESSION NR: AR5015187

SOURCE: Ref. zh. Metallurgiya, Abs. 5I381

AUTHOR: Baytina, V. K.; Dovgalevskiy, Ya. M.; Vlaskina, K. I.

TITLE: Conditions for heat treatment of ANKoTI type alloys

CITED SOURCE: Sb. dokl. na Vses. soveshchanii po litym splavam dlya postoyan. magnitov, 1962. Saratov, 1964, 109-121

TOPIC TAGS: heat treatment, metal hardening, annealing, magnetic field, isothermal treatment, metal physical property, magnetic property, single phase/ ANKoTI alloy, YuNDKBTi alloy

TRANSLATION: Recommendations are given for optimum hardening and annealing conditions for a . . . a temperature of . . . -12 . . . or up to (750-400°) at which temperatures the alloy is in a single phase state; 2) cooling to 660-700° at a critical speed with application of a magnetic field (1500 oersteds); 3) isothermal treatment without application of a magnetic field in the interval 700-600 with a . . . time . . . for the

Card 1/2

L 58864-65
ACCESSION NR: AR5015187   /

temperature isotherm; and, 4) 7-3-step annealing to 530°. The
following values of the magnetic properties were obtained: B_r = 7500
gausses, H_c = 1500 oersteds, $(BH)_{max}$ = 4.2 x 10^6 gauss-oersteds.
(From R. Zh. Elektrotekhnika.

SUB CODE: MM   ENCL: 00

Card 2/2

L 34066-65   EPR/EPA(s)-2/EWA(c)/EWT(m)/EPA/bb)-2/EWT(b)/T/EWA/4)/EWP/t)   PS-4/PL-10/
            Ras IJP   WW JD/JW

ACCESSION NR: AP5005097   S/0129/65/000/002/0011/0016

AUTHOR: Baytina, V. K.; Vlaskina, K. I.; Dovgalevskiy, Ya. M.

TITLE: Heat treatment of YuNDK35T5 alloy

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 2, 1965, 11-16,
and insert facing p. 41

TOPIC TAGS: alloy heat treatment, alloy phase transformation, alnico alloy,
thermomagnetic treatment, phase analysis, magnetic alloy / YuNDK35T5 alloy

ABSTRACT: The article reports the results of a study of the transformations which
YuNDK35T5 alloy undergoes during heating and cooling. The main components of this
alloy are Co, Ni, Al, Cu, and Ti, the percentages for which are given for three
melts in tabular form. The residual induction, coercivity, and saturation magne-
tization were measured. Heat treatment in a magnetic field (thermomagnetic treat-
ment) was accomplished by cooling of the specimen in a special furnace situated
in the gap of an electromagnet. The electromagnet provided a magnetic field
strength of 1500 oersted. The required temperature was maintained within 1° in
the furnace. Isothermal heat treatment was used to investigate structural trans-
formations. A bath with fused salt was used to study high-temperature transforma-
Card 1/2

L 34066-65

ACCESSION NR: AP5005097

/

tion and a bath with molten tin for low-temperature $\beta \rightarrow \beta_2$ transformation. A dia-
gram of isothermal β-transformation of the ... was ...
the kinetics of high-temperature ...

ASSOCIATION: Saratovskiy politekhnicheskiy institut (Saratov polytechnic
institute)

SUBMITTED: 00   ENCL: 00 ·   SUB CODE: MM

Card 2/2   NO REF SOV: 007   OTHER: 002

ASHRATOVA, Sof'ya Kemalevna; VLASKINA, Lidiya Sergeyevna; GRACHEVA,
    A.V., red.; TRISHINA, L.A., tekhn. red.

[New rapid-sewing machines of classes 83, 93, and 49 for the
assembly and stitching of Russian leather shoe parts] Novye
bystrokhodnye shveinye mashiny dlia sborki zagotovok iuftevoi
obuvi 83, 93, i 49 klassov. Moskva, Rostekhizdat, 1962. 119 p.
                    (Shoe machinery)   (MIRA 15:7)

1. VLASKINA, V.

2. USSR (600)

4. Labor Productivity

7. To the standard of the foremost. V pom profaktivu No. 2   1953.

9. Monthly List of Russian Accessions, Library of Congress, ____April____1953, Uncl.

ACC NR: AP6021572   (A)   SOURCE CODE: UR/0131/66/000/003/0059/0061

AUTHOR: Nazarenko, N. D.; Vlasko, N. I.; Tikush, V. L.; Skryabinskaya, L. V.

ORG: Institute of Materials Research, AN UkrSSR (Institut Problem Materialovedeniya, AN SSSR)

TITLE: Superduty nonfired refractories with magnesium phosphate used as the binder

SOURCE: Ogneupory, no. 3, 1966, 59-61

TOPIC TAGS: refractory, magnesium compound, phosphate, nonclay refractory product

ABSTRACT: Superduty concretes were experimentally produced on using fused-magnesite wastes of electric-heater production and monosubstituted magnesium phosphate. The phosphate was obtained by adding small portions of active MgO to preheated phosphoric acid:

$$MgO + 2H_3PO_4 \rightarrow Mg(H_2PO_4)_2 + H_2O$$
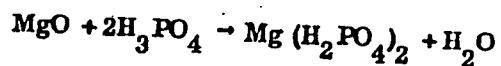
and evaporating the solution until a dry residue remained. This residue, dry monosubstituted magnesium phosphate, was added as the binder to the charge. Specimens of the resulting material were immediately pressed in semi-dry form in a hydraulic press and dried, first in

Card 1/2

UDC: 666:856

ACC NR: AP6021572

air and then at 100-110°C (when the final setting of the phosphate binder additionally enhanced the strength of the material). The dry specimens wore heated to 900°C in a muffle furnace and to 1700°C in a Kryptol furnace. Findings indicate that the minimum spalling resistance of the specimens after heating at 900°C is sufficiently high, and that it increases markedly when they are heated at 1200-1500°C. The material thus developed may be primarily recommended for the production of rammed refractory linings and accessories (including flame tubes) for high-temperature furnaces of the laboratory type. Orig. art. has: 5 tables.

SUB CODE: 11 / . SUBM DATE: none/ OTH REF: 002

Card 2/2

ASKINAZI, Kh., inzh.; VLASKO, Yu.., inzh.

Operational requirements of motor vehicles used for container trans-
portation. Avt.transp. 40 no.1:14-16 Ja '62.   (MIRA 15:1)
                          (Tractor trains)

PANKIN, M.; VLASKO, Yu.

       Reqiurements of metal-transporting vehicles. Avt.transp.
       39 no.10:13-15 O '61.   (MIRA 14:10)

       1. Glavmosavtotrans i Nauchno-issledovatel'skiy institut
       avtomobil'nogo transporta.
                  (Truck trailers)

VLASKO, Yu.

Motor vehicles for the transportation of building materials.
Avt.transp. 40 no.3:26-28 Mr '62.   (MIRA 15:2)
(Building materials—Transportation)

PONIZOVKIN, A.N.; SHURKINA, V.S.; KUZNETSOV, V.A.; TUZOVSKIY, I.D.;
    ETMANOV, S.Ya.; VINOGRADOV, V.V.; VLASKO, Yu.M.; GRINBERG,
    P.I.,red.; BODANOVA, A.P., tekhn. red.

[Brief handbook on motor vehicles] Kratkii avtomomibl'nyi
spravochnik. Izd.4., perer. i dop. Moskva, Avtotransiz-
dat, 1963. 311 p.   (MIRA 17:1)

1. Moscow. Nauchno-issledovatel'skiy institut avtomobil'-
nogo transporta. 2. Laboratoriya gruzovykh avtoi obiley i
avtopoyezdov Nauchno-issledovatel'skogo instituta avtomo-
bil'nogo transporta (for all except Grinber, Bodanova).
                    (Motor vehicles)

BRONSHTEYN, L.A., dotsent; AFANAS'YEV, L.L., dotsent, BASH, M.S., dotsent;
     VLASKO, Yu.M., inzh.; ZEMSKOV, P.F., inzh.; KRAMARENKO, G.V.,
     dotsent; LEYDERMAN, S.R., dotsent; LIV'YANT Ia.A., ispoln.obyazan-
     nosti dotsenta; LYUBINSKIY, N.M., inzh.; NAYDENOV, B.F., inzh.;
     FINKEL'SHTEYN, A.L., inzh.; KHROMOV, A.A., inzh.; CHUDINOV, A.A.,
     inzh.; GOBERMAN, I.M., red.; GALAKTIONOVA, Ye.N., tekhn.red.;
     DONSKAYA, G.D., tekhn.red.

[Centralized automotive freight haulage] TSentralizovannye pere-
vozki gruzov avtomobil'nym transportom. Pod obshchei red. I.M.
Gobermana. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transpor-
ta i shosseinykh dorog RSFSR, 1960. 206 p.   (MIRA 13:9)

1. Moscow. Avtomobil'no-dorozhnyy institut.
                (Transportation, Automotive)

BELOV, V.P.; KOZLOV, B.P.; LESHCHENKO, V.G.; SHMELEV, A.N., kand.
    tekhn. nauk, retsenzent; VLASKO, Yu.M., red.; TAIROVA, A.L.,
    red. izd-va; EL'KIND, V.D., tekhn. red.; DEMKINA, N.F.,
    tekhn. red.

[Automatically controlled electric drives of textile machinery]
Avtomatizirovannyi elektroprivod tekstil'nykh mashin. Moskva,
Mashgiz, 1962. 371 p.   (MIRA 16:2)
        (Textile machinery—Electric driving)
            (Automatic control)

AKHPOLOV, I.K., inzh.; VLASKO, Yu.M.

Operational requirements for dump trucks and tractor trains
carrying loads of loose materials. Stroi. i dor. mash. 9
no.9:22-25 S '64.   (MIRA 17:11)

VLASKO, Yu.M., inzh.

Operational requirements for automotive transportation facilities
for construction. Stroi.i dor.mash. 7 no.10:6-9 0 '62.
(MIRA 15:11)

(Motortrucks)

VLASKO, Yu.; KADOLKO, L.

Dump truck trains for transportation of bulk construction materials.
Avt. transp. 42 no.9:40-42 S '64.   (MIRA 17:11)

CHERNYAYKIN, Vladimir Aleksandrovich; VLASKO, Yuriy Mikhaylovich;
    DUBROVSKIY, Ye.V., red.; ATROSHCHENKO, L.Ye., tekhn. red.

[New Soviet motor vehicles] O novykh otechestvennykh avtomobi-
liakh. Moskva, Izd-vo "Znanie," 1962. 45 p. (Novoe v zhizni,
nauke, tekhnike. IV Seriia: Tekhnika, no.3)   (MIRA 15:6)

        (Motor vehicles)

VLASKO, Yu.M.; KUZNETSOV, Ye.I.

Operating requirements to supporting brackets of semitrailers.
Avt.prom. 28 no.12:24-25 D '62. (MIRA 16:1)

1. Nauchno-issledovatel'skiy institut avtomobil'nogo transporta.
(Truck trailers)

KIRENSKIY, L. W.; VLASOV, A. Ya.

Magnetostriction

Temperature hysteresis of magnetostriction, Izv. AN SSSR, Ser. fiz, 16 No. 6, 1952

ASKINAZI, Kh.L., inzh.; VLASKO, Yu.M., inzh.

    Automotive transportation of freight for construction. Stroi.i
    dor.mash. 6 no.8:4-8 Ag '61.   (MIRA 14:8)
        (Truck trailers) (Building materials--Transportation)

SIROTENKO, I.; VLASKOV, I.

Use of the exhaust gases of a jet plane engine for drying corn on
the cob in the Velichkov grain receiving center. Muk.-elev. prom.
28 no.2:10-11 F '62.   (MIRA 15:3)

1. Direktor Velichkovskogo khlebopriyemnogo punkta (for Sirotenko).
                (Velichkov--Corn (Maize)--Drying)

DENISENKO, V.I.; VLASNEKO, V.L.

Installation for straightening sides of dump cars. Sbor.rats.
predl.vnedr.v proizv. no.5:62-63 '60.
(MIRA 14:8)

1. Dnepropetrovskiy metallurgicheskiy zavod imeni Petrovskogo.
(Railroads—Equipment and supplies)

VLASOV, A., inzhener-polkovnik.

Induction heating of metals by high-frequency currents. Tankist
no.5:46-47 My '56.   (MIRA 11:3)

(Induction heating)

VLASOV, A.

VLASOV, A., inzh.-polkovnik.

High-frequency metallizing. Tankist no.1:51-52 Ja '58. (MIRA 11:3)
(Metal spraying)

VLASOV, A., inzh.

Introduce over-all mechanization of navigational operations on dredger
barges. Rech.transp. 19 no.8:27-29 Ag '60.   (MIRA 14:3)
        (Towing)

VLASOV, A., inzh.

Improve the technical operation of the channel dredging and
maintenance fleet. Rech. transp. 20 no.8:24-25 Ag '61.
(MIRA 14:10)

(Dredging machinery)

VLASOV, A.

Eliminate deficiencies in planning and construction. Fin. SSSR
37 no.8:15-20 Ag '63.   (MIRA 16:9)

1. Nachal'nik otdela Stroybanka SSSR.
                    (Chemical plants--Design and construction)

VLASOV, A.

Sovetskaia armiia i zheleznodorozhnyi transport. /¯The Soviet army and railroad transportation_/. (Zhel-dor. transport, 1948, no. 2, p. 9-16).

DLC: HE7.Z5

SO: SOVIET TRANSPORTATION AND COMMUNICATIONS, A BIBLIOGRAPHY, Library of Congress
      Reference Department, Washington, 1952, Unclassified.

DOLYA, V. (g.Rezekne); VLASOV, A. (g.Sverdlovsk); BULEGA, I. (s.Kurashevtsy, Vinnitskaya obl.); MIRONOV, Ye. (sovkhoz Neyelovo, Smolenskaya obl.); VOLKOV, V. (s.Kazanka, Nikolayevskoy oblasti); BRUDKIN, A. (Khabarovskiy kray)

Suggestions of the wire broadcasting workers. Radio no.2:49-50
F '62.   (MIRA 15:1)
               (Wire broadcasting--Equipment and supplies)

VLASOV, A.

Group organizer Aleksandr Kovalenko. Sov.profsoiuzy [8]
no.3:39-40 F '60.   (MIRA 13:2)

1. Instruktor orgotdela Voronezhskogo oblsovprofa.
    (Voronezh—Turning) (Trade unions)

VLASOV, A.

Pneumatic removal of chips and dust from cutting tools. Obr.
truda i sots. strakh. 4 no.10:27-28 O '61.   (MIRA 14:12)
(Machine tools--Safety measures)

VLASOV, A.; PODATNOVA, L.

        Struggle for industrial hygiene and economic efficiency. Okhr.
        truda i sots.strakh. 6 no.2:6-7 F '63.   (MIRA 16:2)
                      (Insurance, Social)
          (Machinery industry—Safety measures)

VLASOV, A., inzhener.

Mechanized water supply in poultry cages. Mias.Ind.SSSR 26 no.6:
21-24 '55.   (MLRA 9:2)

1.Temilinskaya ptitsefabrika.
                    (Poultry--Watering)

VLASOV, A., inzhener

Number of birds per cage in poultry husbandry. Mias.ind.SSSR 26 no.2:
27-30 '55.   (MLRA 8:7)

1. Tomilinskaya ptitsefabrika. (Poultry houses and equipment)

CA

The reaction of Kreis-Wiedemann as a rapid method for determining the unpalatability of edible animal fats. A. Vlasov. *Voenno-Sanit. Delo* 1938, No. 1, 71-4; *Chem. Zentr.* 1938, II, 1874-9.—The reaction of Kreis-Wiedemann has been shown to be a reliable method of detg. the palatability or lack of palatability of edible animal fats. It is superior to the organoleptic method in reliability and is more rapid. M. G. Moore

29

Technical gelatin from bones. A. Lindov. Method of manuf. by
Ind. S.S.S.R. 19, No. 5, 21-6(1948)   M. M. Piskur
is presented.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VLASOV, A.

Gelatine

Autoclave method of producing gelatin. Mias. ind SSR 23 No. 3, 1952.

9. **Monthly** **List** **of** **Russian** **Accessions**, Library of Congress, <u> September </u> 1952 Unclassified.

VLASOV, A.

Granulated bone glue. A. Vlasov. Myasnaya Ind]
S.S.S.R. 25, No. 1, 16-20(1954).—Equipment and method
of production are described.   M. M. Piskur

VLASOV, A., inzhener.

Graphs for glue extraction from ground bone. Mias. ind. SSSR 26
no.1:27-31 '55.   (MIRA 8:5)
          (Bone products)

VLASOV, A.

Improving the dredging and maintenance fleet. Rech. transp. 24 no.8:
35-38 '65.
(MIRA 18:9)

1. Zamestitel' nachal'nika Glavnogo upravleniya vodnykh putey 1
gidrosooruzheniy.

L 2383-66

ACCESSION NR:. AP5022142   UR/0310/65/000/008/0035/0038

AUTHOR: Vlasov, A. (Deputy chief)

TITLE: Developing the technical capacities of the river fleet

SOURCE: Rechnoy transport, no. 8, 1965, 35-38

TOPIC TAGS: inland waterway, shipbuilding engineering

ABSTRACT: The author enumerates and describes the various methods, equipment and goals of the Ministry of the River Fleet (MRF) for improving its ships and expanding water ways throughout the USSR. Three tables give data on the existing dredges, scoops and derricks. It is stated that 7 construction organizations have participated during the last 8 years in improving and expanding the operations of various branches of the river fleet, and that in the next 5 years it will be necessary to do further research for the improvement of engineering maps, technical procedures, designs, etc., in order to meet the ever increasing demands made on the technical capacities of the fleet. Orig. art. has: 3 tables.

ASSOCIATION: none

Card 1/2

L 2383-66
ACCESSION NR: AP5022142

SUBMITTED: 00   ENCL: 00   SUB CODE: 00   O

NO REF SOV: 000   OTHER: 000

BVK
Card 2/2

VLASOV, A., inzh. (Vil'nyus); TUCHAS, V. [Tucas, V.], inzh. (Vil'nyus)

Draining and bringing under cultivation peat bogs and floodland
meadows in Lithuania. Gidr. i mel. 17 no.12:21-28 D '65.
(MIRA 19:1)

SAMOYLOVICH, D.M.; BARINOVA, Ye.S.; VLASOV, A.A.; YUKHNOVSKAYA, O.P.

Increase of the sensitivity and development compensation in type
"R" emulsions in glued condition. Zhur.nauch.i prikl.fot.i kin.
5 no.2:142-143 Mr-Ap '60.   (MIRA 14:5)

1. Zavod tekhnicheskikh plastinok, Moskva.
                    (Photographic emulsions)
           (Photography—Developing and developers)

SAMOYLOVICH, D.M.; BARINOVA, Ye.S.; VLASOV, A.A.; YUKHNOVSKAYA, O.P.

Investigating the sensitivity of emulsion R under various processing conditions. Zhur.nauch.i prikl.fot.i kin. 5 no.1:56-57 Ja-F '60.   (MIRA 13:5)

1. Zavod tekhnicheskikh plastinok, Moskva.
(Photographic emulsions--Testing)

VLASOV A A.

VLASOV, A.A., inzh.

New vessels servicing the local needs in economic regions. Rech. transp. 16 no.11:36-38 N '57.   (MIRA 10:12)
        (Inland water transportation)   (Ships)

VLASOV, A.A., inzh.

Organizing repair of the inland water transportation fleet.
Rech. transp. 17 no.8:12-14 Ag '58.   (MIRA 11:10)
(Ships--Maintenance and repair)

VLASOV, Aleksey Andreyevich; GREBENSHCHIKOV, R.A., inzh., retsenzent;
VORONTSOV, S.D., inzh., red.; KAN, P.M., red.izd-va; BODROVA,
V.A., tekhn. red.

[Vater-jet propelled river vessels] Rechnye vodometnye suda.
Moskva, Izd-vo "Rechnoi transport," 1962. 156 p.   (MIRA 15:5)
     (Inladn navigation)   (Water jet)

Vlasov, A.A.

28(1)   PHASE I BOOK EXPLOITATION   SOV/2156

Soveshchaniye po kompleksnoy mekhanizatsii i avtomatizatsii tekhnologicheskikh protsessov. 2nd, 1956.

Avtomatizatsiya mashinostroitel'nykh protsessov; /trudy soveshchaniya/, tom. 1: Goryachaya obrabotka metallov (Automation of Machine-Building Processes; Proceedings of the Conference on Over-All Mechanization and Automation of Technological Process, Vol 1: Hot Metal-Forming) Moscow, 1959. 394 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya.

Resp. Ed.: V.I. Dikushin, Academician; Compiler: V.M. Raskatov; Ed. of Publishing House; V.A. Kotov; Tech. Ed.: I.P. Kuz'min.

PURPOSE: The book is intended for mechanical engineers and metallurgists.

COVERAGE: The transactions of the Second Conference on the Over-All Mechanization and Automation of Industrial Processes, September 25-29, 1956, have been published in three volumes. This book, Vol. I, contains articles under the general title, Hot Working of Metals. The investigations described in the book were conducted by the Sections for Automation and Hot Working of Metals under the direction of the following scientists: casting - A.I. Tselikov, P.N. Aksenov, D.P. Ivanov and G.M. Orlov; forming - A.I. Tselikov, A.D. Tomlenov and V.T. Meshcherin; welding - G.A. Nikolayev, B.I. Frolov and G.A. Maslov. There are 183 references: 142 Soviet, 34 English, 6 German, and 1 French.

TABLE OF CONTENTS:

PART I. AUTOMATION OF CASTING PROCESSES

PART II. AUTOMATION OF METAL FORMING UNDER PRESSURE

Card 1/8

VLASOV,   A. A.

        "Theory of t he Vibratory Properties of Electron Gas," Uchenyye zapiski
Moskovskogo gos. un-ta (Scientific Journal of Moscow State University), 1935,
Issue 75.

VLASOV,   A. A.

"On the Theory of a Hard Body," <u>Uchenyye zapiski Moskovskogo gos. un-ta</u> (Scientific Journal of Moscow State University), 1935, Issue 77.

VLASOV, A. A.

" On the Problem of Numerous Bodies," Uchenyye zapiski Moskovskogo gos. un-ta (Scientific Journal of Moscow State University), 1935, Issue 77.

CA

3

Theory of the broadening of spectral lines by homogene-,

and gases. V. Fursov and A. Vlasov, Phys. Z.
Sovietunion 10, 378–412(1936).—It is shown that the
existing theories are untenable. A rational explanation is
offered for the greater broadening with gases of increasing
d. The problem is treated classically and by quantum
mechanics. The results are compared with the expt.
data. The influence of radiation during collision on the
shape and width of the lines is discussed.   H. G.

ASM-SLA   METALLURGICAL LITERATURE CLASSIFICATION

VLASOV, A.A.

7229

Ca

3

Width of the spectral lines of a homogeneous gas at high densities. A. A. Vlasov and V. S. Fursov. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 9, 783-8(1939); cf. *C. A.* 31, 2925[1].—Theoretical-math. Vl. and P. calc. the widening of the resonance levels as a consequence of dipolar interaction between like atoms at high gas densities. The widths of the spectral lines calcd. for Hg at 20-30 atms. and 6000-8000° agree fairly well with those found by Rompe and Schulz (*C. A.* 32, 5701[1]).   F. H. R.

ASB-SLA   METALLURGICAL LITERATURE CLASSIFICATION

2576

537.525
A Generalisation of the Conception of Electron Plasma. A. A. Vlasoff. (Bull. Acad. Sci. U.R.S.S., sér. phys., 1944. Vol. 8, No. 5, pp. 248 etc. In Russian.) The importance of the interaction between electrons over distances exceeding their average spacing ("distant forces") is emphasized. If this interaction is taken into account, new dynamic properties of polyatomic systems become apparent, and the conceptions of "gas", "liquid" and "solid body" are modified towards greater unification with the conception of plasma. The problem of the transition from "micro" to "macro" is also understood in a different light. The main result is the proof that if the fundamental kinetic equation (1) is used, in which the distant interaction is taken into account, the spontaneous appearance of the crystalline structure from the gas (under suitable conditions with regard to density and temperature) becomes evident without the use of any additional hypotheses. The same applies to the appearance of peculiar "vibrational" properties in polyatomic systems. Conditions necessary for the appearance of the crystalline structure are discussed in detail.

BC

Kinetic theory of an assembly of particles with collective interaction. Vibrational properties, crystal structure, non-dissipated counter-directed currents, and spontaneous origin of these properties in a "gas." A. Vlasov, *J. Physics U.S.S.R.*, 1945, 9, 25—40).—In the theory developed, short-range collision interaction is neglected, and only the long-range forces between the particles are considered. It is shown that there arise simultaneously (i) eigenfrequencies determined by the nature of the interaction, the temp., and the density; (ii) a crystal structure under suitable conditions of temp., concn., and range and intensity of the interaction; (iii) currents in the medium due to the collective interaction. The origin of a crystal structure according to the present theory is contrasted with Born's theory.
H. J. W.

2

ON THE THEORU OF THE SOLID STATE. A. VLASOV (J. PHYSICS (U.S.S.R.), 1945, 9,(2), 130-138) *(In English.) Mathematical. The conceptions of Cauchy, Boltzmann, and Born are considered togetjer, and it is shown that it is possible, by including in these theories the effect of interactions between atoms at distances exceeding the mean distance between particles, to account for the spontaneous origin of a periodic structure from a random "gaseous" structure at definite values of the density and the temperature/ --G.V.R.

METALLURGICAL LITERATURE CLASSIFICATION

VLASOV, A. A.   PA 9/49T63

USSR/Mathematics - Equations, Integral   Sep 48
    Mathematics - Equations, Linear

"New Outlook on the Problem of Many Particles," A.
A. Vlasov, Moscow State U, 16 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 9, pp 840-56.

Article has seven parts: fundamentals; fixed con-
stants as problem of strict values for nonlinear
integral equations; spectrum of linearized equa-
tions; general consideration of derivation of
solutions; derivation of solutions from the simple;
derivations of solutions from periodics, and
special solutions.

                                            9/49T63

VLASOV, A. A.

Teoriia mnogikh chastits. Moskva, Gostekhizdat, 1950. 348 p.
Title tr.: Theory of many particles.

QC721.V55

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of
Congress, 1955.

VLASOV, A. A.

Vlasov, A. A., and Bezarov, I. P   On the theory of state.
Akad. Nauk SSSR Zurnal ...
1108 (1950)   (Russian)
Considerations of the passage ...
particularly the ...
least the ...
...
process ...
calculations involving prin ...
showing some degree of agreement with experiment. The
emphasis of the paper is primarily physical.

Source: Mathematical Reviews.   3

SA

A 548

548.7 : 539.21

7303. Theory of the crystalline state. A. A. VLASOV AND V. A. YAKOVLEV. *J. Exp. Theor. Phys., USSR, 20, 1109-15 (Dec., 1950) In Russian*

As shown before [Abstr. 461 (1949)] the nature of the crystalline state may be represented in terms of a single distribution function, describing the condition of a single particle chosen at random from a group of identical particles. The expression obtained represents the criterion of crystallization, relating interaction forces, temperature and density of the medium. These results are now supplemented by the demonstration that the solution mentioned, periodical in space, is only one of the exact solutions of the fundamental equation of the problem (thus a non-uniqueness theorem), and further by the convergence investigation of the series of successive approximations not given before. The periodic solution obtained has certainly a direct bearing on the description of the process of formation of a crystal from a homogeneous phase, at least for substances with molecules of the type of the inert gases, i.e. with a radial law of the interaction forces.

N. F. KRALS

A 5 M - 15 A   METALLURGICAL LITERATURE CLASSIFICATION

VLASOV, A. A.

155T80

15,T80

USSR/Physics - Particles
Statistical Mechanics   Jan 50

"Theory of Nonlocalized Particles," A. A. Vlasov,
3 pp

"Zhur Eksper i Teoret Fiz" Vol XX, No 1

Remarks in response to article by S. V. Tyablikov,
in same issue, "Some Comments on the Problem of Many
Bodies as Set Up by A. A. Vlasov." Vlasov reaffirms
two statements: (a) rejection of the spatial and
velocity localization of particles as factor preced-
ing the interaction of forces; (b) consideration of
the finite bond of individual properties of particles

USSR/Physics - Particles (Contd)   Jan 50

and the laws of their motion and the total collectiv-
ity (collective interaction for arbitrary forces).
Comments on Gibbsian statistics. Submitted 20 Oct 49

155T80

VLASOV, A. A.

USSR/Nuclear Physics - Mass and charge transfer

FD-800

Card 1/1   Pub. 146-13/21

Author   : Vlasov, A. A.

Title   : Transfer of mass and charge by surface waves

Periodical : Zhur. eksp. i teor. fiz., 27, 224-242, Aug 1954

Abstract   : The boundary problem of the theory of multiple particles leads to the
               conclusion of the transfer of matter by surface waves. The developed
               concept is realized in capillary waves of HeII and in electric surface
               waves in the electron plasma of superconductors. Nine references in-
               cluding 2 foreign.

Institution : Moscow State University

Submitted   : June 18, 1953

VLASOV, Anatoliy Aleksandrovich; GUROV,K.P., redaktor; GAVRILOV,S.S., tekhnicheskiy redaktor

[Macroscopic electrodynamics] Makroskopicheskaia elektrodinamika. Moskva, Gos.izd-vo tekhniko-teoret.lit-ry, 1955. 228 p. (Electrodynamics)

(MLRA 9:3)

VLASOV, A.A.

Nonuniform space distribution of a system of particles affected by gravitation. Vest. Mosk.un.Ser.mat.mekh.astron.fiz. khim. 12 no.4: 95-107 '57.   (MIRA 11:5)

1.Kafedra teoreticheskoy fiziki Moskovskogo gosudarstvennogo universiteta.

(Astrophysics) (Dynamics of a particle)

VLASSOV, A. A.

"Nonlinear Plasma Limited in Space."

paper presented at Second All-Union Conference on Gaseous Electronics, Moscow,
2-6 Oct '58.

VLASOV A A.

PHASE I BOOK EXPLOITATION   SOV/3405

Soveshchaniye po voprosam kosmogonii. 6th, Moscow, 1957

Vnegalakticheskaya astronomiya i kosmologiya; trudy soveshchaniya (Extragalactic Astronomy and Cosmology; Transactions of the 6th Conference on Problems of Cosmogony, June 5-7, 1957) Moscow, AN SSSR, 1959. 273 p. Errata slip inserted. 1,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR.

Ed. of Publishing House: L.V. Samsonenko; Tech. Ed.: G.N. Shevchenko; Editorial Board: D.A. Frank-Kamenetskiy (Resp. Ed.) Professor; B.A. Vorontsov-Velyaminov, Corresponding-Member.

PURPOSE: The book is intended for astronomers and physicists studying problems of general cosmology.

COVERAGE: The book is a collection of papers on cosmogony read by scientists participating in a conference held in Moscow on June 5-7, 1957. The papers review recent observational and theoretical work in extragalactic astronomy, gravitational theory, theory of relativity, red shift, radio astronomy, formation of chemical elements, thermodynamics of the universe, entropy, etc. No personalities are mentioned. There are references following most of the reports.

VLASOV A. A.

PHASE I BOOK EXPLOITATION

SOV/3609

Soveshchaniye po voprosam kosmogonii, 6th, 1957.

Trudy soveshchaniya...; Vnegalakticheskaya astronomiya i kosmologiya
(Transactions of the 6th Conference on Problems of Cosmogony;
Extragalactic Astronomy and Cosmology) Moscow, Izd-vo AN SSSR, 1959.
273 p. Errata slip inserted. 1,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Astronomicheskiy Sovet.

Editorial Board: D.A. Frank-Kamenetskiy, Professor (Resp. Ed.);
B.A. Vorontsov-Vel'yaminov, Corresponding Member, Academy of
Pedagogical Sciences USSR; Ya. A. Smorodinskiy, Professor; A.L.
Zel'manov, Senior Scientific Contributor; and R.C. Sagirev
(Scientific Secretary) Junior Scientific Contributor; Ed. of
Publishing House: L.V. Samsonenko; Tech. Ed.: O.M. Berochenko.

PURPOSE: The publication is intended for astronomers, geophysicists and
theoretical physicists interested in general problems of cosmology.

COVERAGE: This is a collection of reports given at the 6th Conference on the
Problems of Cosmogony, June 5-7, 1957. In the publication observational
data in the field of extragalactic astronomy are summarized, the data are
analyzed from a theoretical point of view, and the accuracy and reliability
of the observations are evaluated. The relativistic cosmological theories
are discussed in detail for the first time in Soviet literature and
correlated with observational data, primarily with the red-shift measure-
ments. The relationship of cosmology to the theory of the formation of chem-
ical elements and general thermodynamic and philosophical problems of cosmology
are also investigated. No personalities are mentioned. References accompany
some of the articles.

C

CHINA/Nuclear Physics - Physical Base of Nuclear and
Thermonuclear Technology

Abs Jour   : Ref Zhur Fizika, No 4, 1960, 8227

Author   : Vlasov, A.A.
Inst   :
Title   : New Principle of Existence of High Temperature Plasmoids

Orig Pub   : Scientia sinica, 1959, 8, No 3, 266-287

Abstract   : A detailed calculation is given for the influence of four
factors on a beam consisting of charged particles of like
polarity (ions or electrons). The four factors are :
external magnetic field (parallel to the axis of the
beam), rotation of the beam (under suitable interpreta-
tion), forces of mutual repulsion between particles due
to the presence of space charge, and temperature veloci-
ty dispersion. Allowance for these factors leads to the
presence of a definite stationary state of motion of
particles in the beam. This stationary state is

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- 33 -

CHINA/Nuclear Physics - Physical Base of Nuclear and   C
          Thermonuclear Technology

Abs Jour   : Ref Zhur Fizika, No 4, 1960, 8227

                 characterized by a strongly outlined cylindrical boun-
                 dary of the beam, the radius of which is found to be
                 not arbitrary, but determined by the foregoing factors.
                 There exists a definite relation between the effective
                 radius, the temperature, and the magnetic field of the
                 beam. Under suitable values of the magnetic fields and
                 the dimensions, one can expect temperatures on the order
                 of 10^{10} -- 10^{12}°K. The beam is rotated not with cyclo-
                 tron frequency, at least on the periphery, but with
                 Larmor frequency. Under definite conditions for the
                 concentration and magnetic field, the beam is stable
                 with respect to variation of these quantities. A jump-
                 like disturbance takes place in the stability (branch
                 points appear) when these conditions are not satisfied.

          Card 2/2

VLASOV, A. A.

"The Many Particle Problem and the Acceleration-dependent Distribution Function:"

report submitted for the Intl. Conference on Many-body Problems (IUPAP),
Utrecht, Netherlands, 13-18 June 1960

Chair of Theoretical Physics, Moscow State Univ.

S/0??/6?/0??/007/00?/02?
B?08/B20?

94,9200

AUTHOR: Vlasov, A. A

TITLE: Theory of a new plasmoid

PERIODICAL: Zhurnal, tekhnicheskoy fiziki, v. 3?, no. ?, '96', 785- ?6

TEXT: For a spatially bounded plasma consisting of one kind of charged
particles which are kept together by internal (and external) forces, a?
closed integral phase equations must exist, i.e. completely determined ex-
pressions interrelating the linear dimensions of the plasmoid and the inner
characteristics (temperature, concentration, magnetic field, etc.) When
an external magnetic field is applied, a cylindric beam of atomic nuclei,
with a drift velocity along the field may be in a plasmoidal state, i.e.
steady states of particle action arise in the beam, in which the diametral
size of the latter is not arbitrary but determined by the internal and ex-
ternal conditions. A plasmoid appears when three factors are present: ex-
ternal magnetic field, proper mechanical rotation and temperature distri-
bution of the velocities. A plasmoid is characterized by a certain effec-
tive radius (depending on temperature, magnetic field, number of revolu-

Card 1/4

Theory of a new plasmoid   S/057/6 /03/ /007/005/02/
                                            B108/B209

tions, and particle concentration)   The plasmoidal state must arise sud-
denly during continuous increase of the magnetic field or the number of
revolutions.   There is a critical value of the field which depends on con-
centration and atomic weight of the nuclei.   Theory lays down these prop-
erties with sufficient reliability to find a similar plasmoid by experi-
ments.   In some important cases, the frequency of revolution of the plas-
moid is determined by the external magnetic field.   In these cases, the
frequency of the revolutions coincides with the Larmor frequency.   Under
the action of a strong magnetic field or when the concentration is suffi-
ciently low, the plasmoidal state is a single steady state characterized
by the temperature distribution of the velocities and the finite space
charge per unit length of the beam.   When the ratio of the Langmuir to the
Larmor frequency is sufficiently high, the plasmoidal state vanishes.   The
consideration of the magnetic field due to the revolution of the plasmoid
and to the motion of the particles in the beam does not interfere with the
existence of a plasmoid.   This field effects a quantitative change in the

integral phase equation, but this effect is small when $\frac{u^2}{c^2} \ll 1$ and $\frac{\theta}{mc^2} < 1$.

Card 2/4

Theory of a new plasmoid

In the simplest case, the integral phase equation of a plasmoid has the form $\theta = \dfrac{m\omega_L^2 D^2}{4}\dfrac{1}{\psi(\lambda)}$, where $\psi(\lambda) = \displaystyle\int_0^{\infty} xe^{-x^2+\varphi}dx$. The function $\varphi(x,\lambda)$ is the solution of the following equation:

$$\frac{1}{x}\frac{d}{dx}\left(x\frac{d\varphi}{dx}\right)=\lambda e^{-x^2+\varphi},$$

$$\varphi(0)=\varphi'(0)=0$$

$$\left[\lambda=2\frac{\omega_0^2}{\omega_L^2},\quad \omega_0^2=\frac{4\pi e^2\rho_0}{m},\quad \omega_L^2=\left(\frac{eH}{2mc}\right)^2\right].$$

The results of the numerical integration of the function $\psi(\lambda)$ are given in the Table. This Table shows that the condition for the plasmoidal state, $\displaystyle\int_0^{\infty} xe^{-x^2+\varphi}dx < \infty$ is satisfied at $\lambda < 4$. There are 1 table and 4 references:

Card 3/4

Theory of a new plasmoid

S/057/61/031/007/005/021
B108/B209

2 Soviet-bloc.

ASSOCIATION: Kafedra teoreticheskoy fiziki MGU (Department of Theoretical Physics of Moscow State University)

SUBMITTED: January 20, 1960

λ	$\psi(\lambda)$
0	0.5000
10^{-2}	0.492
10^{-1}	0.478
1	0.351
2	0.285
3	0.439
3.8	1.689
3.99	6.505
4	$> 10^{19}$

Card 4/4

L 17535-63   EWT(1)/BDS/EEC-2/ES(v)   AFFTC/ASD/AFMDC/ESD-3/APGC Pe-4/
Pi-4/Po-4/Pq-4   PT-2/GW

ACCESSION NR: AP3004418   S/0020/63/151/004/0818/0821

AUTHORS: Vlasov, A. A.; Khakimov, F. Kh.   91
                                                                        80

TITLE: Theory of stationary properties of fully ionized, earth-surrounding plasma.

SOURCE: AN SSSR. Doklady*, v. 151, no. 4, 1963, 818-821.

TOPIC TAGS: ionized plasma, plasma, radiation belt, geophysics,

ABSTRACT: Authors attempt to clarify the question as to whether the radiation belts surrounding the earth are formed as the result of a single statistical formation. The following circumstances must be taken into consideration: (i) the ellipticity of the distribution function at high altitudes; (ii) the effect of the external (dipole) earth's magnetic field upon this distribution; (iii) the interaction of charged particles among themselves and the combined charge of the earth and the atmosphere. These factors produce a considerable space anisotropy in the distribution of nuclei and electrons. The formulation of the problem and its solution are similar to those given in a previous paper by A. A. Vlasov (Zh. T. f. no. 7, 1961, 795). Graphical analysis of the solution shows

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L 17535-63

ACCESSION NR: AP3004418

that there is a belt in which the nuclei predominate; while electrons predominate outside of this belt.   The solution satisfies the condition of neutrality of the system earth, atmosphere, and the fully ionized earth-surrounding plasma. Orig. art. has: 2 figures and 20 unnumbered equations.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 04Dec62   DATE ACQ: 21Aug63   ENCL: 00

SUB CODE: PH   NO REF SOV: 001   OTHER: 000

Card   2/2

BASHKIROV, Valentin Dmitriyevich, dots., kand. tekhn. nauk;
        PUKHOV, Pavel Petrovich, dots., kand. tekhn. nauk;
        VLASOV, A.A., inzh., retsenzent; BABUKIN, B.B., inzh.,
        retsenzent; VITASHKINA, S.A., red.

        [Design of boats of the dredging and maintenance fleet]
        Ustroistvo sudov tekhnicheskogo flota. Moskva, Trans-
        port, 1964. 275 p.   (MIRA 18:2)

SOURCE CODE: UR/0413/66/000/017/0145/0145

ACC NR: AP6032536

INVENTOR: Andrianov, N. I.; Bersudskiy, Z. Ye.; Vlasov, A. A.; Kovachev, A. A.;
Lipets, V. V.; Platonov, V. M.; Seletskiy, Ya. I.

ORG: none

TITLE: The inner panel of all-welded aircraft fuel tank-sections. Class 62,
No. 185707

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 17, 1966, 145

TOPIC TAGS: aircraft fuel tank, aircraft fuel system, fuel tank airframe component,
reinforced shell structure

ABSTRACT: The proposed inner panel of all-welded fuel tank-sections has a corrugated lining and cross
piece stiffeners. In order to assure increased strength and reliability of the seams,
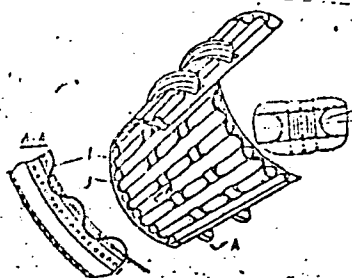

Fig. 1. Fuel tank sections

1 - Longitudinal stiffeners (corrugated
lining); 2 - reinforcing plate; 3 - stamped
conical bands.

UDC: 629.13.01/06

Card 1/2

ACC NR: AP6032536

it is provided with longitudinal stiffeners formed by the sinusoidal cross-section corrugated lining, having flat sections stamped out on the inner waves of the corrugation where they are joined with the cross piece stiffeners. These joints are reinforced by plates and along the ends by conical bands stamped to the lining (see Fig. 1). Orig. art. has: 1 figure.

SUB CODE: 1/ SUBM DATE: 27Nov64/

Card 2/2

B-I-10

ca

20

PROCESSES AND PROPERTIES INDEX

The determination of the depth of penetration of NaF into wood. A. A. Vlasov. *Stroitel. Prom.* 19, No. 3, 31 (1941); *Chem. Zentr.* 1942, II, 1908.—A reagent for NaF in wood is made by dissolving 0.3 g. of phenol red crystals in 100 cc. of distd. water with 30 cc. of alc. and adding 3% concd. H_2SO_4. This reagent gives with NaF a lemon-yellow, with alkalies an egg-yellow color and with untreated wood a raspberry-like color that persists for several days and becomes lighter on contact with water. The reagent can be stored in the light for a month; then it assumes an orange yellow color and becomes unsuitable detection of NaF. Leopold Scheflan

METALLURGICAL LITERATURE CLASSIFICATION

VLASOV, A. A.

20157 VLASOV, A. A. Opyt lecheniya lohorre'l penitsillinom. Sbornik trudov
vracheb.-san. sluzhby kazansk. Zh. d., vyp. 2, 1948, s. 113-17
          GROMOV, V. V. i POGODINA, I. A.
                  Sifilidy grotki v praktike oto laringo loga.-Sm. 20148

SO: LETOPIS ZHURNAL STATEY, Vol. 27, Moskva, 1949

VLASOV, A. A.

Vlasov, A. A.   "Powdery Mildew of European Spindle Tree (Euonymus europaeus),"
Lesnoe Khoziaistva, vol. 5, no. 12, 1952, p. 81.   99.8 L5622

So: SIRA - 90-53, 15 Dec., 1953

VLASOV, Aleksey Alekseyevich; VORONTSOV, Aleksey Ivanovich; PONOMAREVA,
    Yekaterina Nikolayevna; STROKOV, Vyacheslav Vsevolodovich; FLEROV,
    Sergey Konstantinovich; KHRAMTSOV,N.N., redaktor; IL'INSKIY,A.I.,
    kandidat sel'skokhozyaystvennykh nauk; MALKOV,A.A.; KOLESNIKOVA,A.P.,
    tekhnicheskiy redaktor

[Forest protection] Lesozashchita. Izd.2-oe, perer. Pod obshchei
red. S.K.Flerova. Moskva, Goslesbumizdat, 1955. 438 p.
                                                 (MLRA 9:1)

1. Prepodavatel' Khrenovskogo lesnogo tekhnikuma (for Malkov)
        (Forests and forestry) (Trees--Diseases and pests)

ACC NR: AM6021066   Monograph   UR/

Vlasov, Anatoliy Aleksandrovich

Statistical distribution functions (Statisticheskiye funktsii
   raspredeleniya) Moscow, Izd-vo "Nauka," 1966.   355 p. illus.,
   biblio.   Errata slip inserted.   7000 copies printed.

TOPIC TAGS: statistical physics, distribution theory, statistical
   thermodynamics, mechanics, distribution function, function analysis

PURPOSE AND COVERAGE: This monograph is devoted to the basic prin-
   ciples of statistical mechanics and its interrelationships with
   other branches of theoretical physics.   It deals with the inter-
   relationships between distribution functions and mechanics, the
   principle of maximum statistical independence, the interrelation-
   ships with electrodynamics, geometry, relativity, theory and other
   problems.   The book is based on lectures on kinetic equations and
   supplementary topics in statistical physics presented by the author
   in the Physics Department of Moscow State University.   The book may
   be used by senior students, graduate students, scientists, and
   engineers who are concerned with problems of theoretical physics.

TABLE OF CONTENTS [abridged]:

Foreword -- 5
Card 1/2   UDC: 536.70

ACC NR: AM6021066

SUB CODE: 20, 12/   SUBM DATE: 26Mar66/   ORIG REF: 011
OTH REF: 010

Card 2/2

VLASOV, A. A.

USSR/Engineering - Foundry, Equipment   Mar 51

"Foundry Suspension Conveyers," A. A. Vlasov,
Cand Tech Sci, Gor'kiy Industrial Inst

"Litey Proizvod" No 3, pp 9-11

USSR foundry molding shops are installing suspen-
sion-type (pendulum-type) conveyers instead of
ground-, or carriage-type conveyers, widely used
up to now. Describes construction of these con-
veyers and discusses their advantages and short-
comings.

195T42

PA 195T42

L 13953-66   EWT(m)/EWP(1)   IJP(o)   DM

ACC NR: AP6001692   .   SOURCE CODE: UR/0089/65/019/005/0423/0428

AUTHOR: Bondarev, B. I.; Vlasov, A. D.

ORG: none

TITLE: A self-consistent particle distribution in the maximum current of a linear accelerator

SOURCE: Atomnaya energiya, v. 19, no. 5, 1965, 423-428

TOPIC TAGS: linear acceleration, plasma beam, particle accelerator, proton accelerator, particle distribution

ABSTRACT: The problem concerning the maximum possible particle current in linear proton and heavy ion accelerators has gained in importance in recent years. Some of the earlier authors discussed the problem representing the accelerated plasma blobs in the form of uniformly charged ellipsoids. The present article shows that such a model of uniformly charged ellipsoids represents a self-consistent charge distribution. It was assumed that 1) the transverse particle oscillations may be neglected; 2) the blob is circularly symmetric; 3) the distribution density is constant in the region of the separatrices in the phase plane; and 4) the self-consistency problem is formulated for particles only along the axis of the blob. The proof verifies the known expression for the maximum current within a linear accelerator which is based on such a model. The field of adjacent blobs, the effects due to the walls of the accelerating system, and the charges of electrons and ions within the residual gas were not

Card 1/2   UDC: 621.384.62

2

L 13953-66

ACC NR: AP6001692

taken into account. It is also shown that a cylindrical approximation of the blobs does not lead to a self-consistent particle distribution, but does lead to an expression very similar, though somewhat larger, than the correct maximum current expression. Orig. art. has: 27 formulas and 1 table.

SUB CODE: 20/ SUBM DATE: 05Apr65/ ORIG REF: 004/ OTH REF: 001

Card 2/2

VLASOV, A.D.

SUBJECT	USSR / PHYSICS	CARD 1 / 2	PA - 1753
AUTHOR	VLASOV,A.D.		
TITLE	Focussing with Change of Sign in Linear Accelerators.		
PERIODICAL	Atomnaja Energija, 1, fasc. 5, 20-25 (1956)		
	Issued: 1 / 1957		

The present work gives a short description of work performed by the author in 1953-1955. Such problems as focussing with a change of phase, tolerances, deforming effect of space charge, etc. are not dealt with in the present work and must be investigated separately.

Initial Equations; amplitude of oscillations within a structural period: The radial motion of a particle with the mass

$m = m_0 / \sqrt{1 - \beta^2}$, with the velocity $v = \beta c$ and with the phase φ is described in the XZ plane in linear approximation by the equation $d/dt(m \, dX/dt) = F(Z,\varphi) \cdot X$. The gradient of the radial forces is composed of the gradient produced by the lenses and of the gradient of the defocussing forces of the accelerating field. The "kinematic" factor $\sqrt{L/mv}$ (where L is the half length of the structure period) in accelerators with drive tubes (L~v) is constant in nonrelativistic approximation. In accelerators of similar resonators with one interspace each and also in the case of free oscillations in a cyclical accelerator (L = const) this factor is inversely proportional to the square root of the momentum.

The stability range, possibility of focussing with change of sign. The case with the most simple structural period is now investigated, namely an idealized

accelerator with undamped propagated waves and with a rectangular character-
istic of the gradient in the lenses. The equation of this problem is

$$d^2x/ds^2 + \left[\pm \Lambda^2 - A \sin \varphi \right] x = 0.$$ The matrices of the focussing and de-
focussing half-period are given. The upper part of the stability range
$(\Lambda > 1{,}7)$ can in practice not be used for this work, and this limits the
field strength of the accelerating field for a given β. L and λ . The middle
part of the stability range $(\Lambda = 1{,}4 - 1{,}6)$ can be used. Decrease of the
change of sign of the lenses makes an amplification of the accelerating field
possible, but at the same time it requires a reinforcement of the gradient in
the lenses.
There follows the computation of the matrices of the composed periods. A method
for simplified computation is discussed on the basis of the example of an
accelerator with drive tubes. The matrices of the focussing and defocussing
lenses and of the interspace between the lenses are explicitly given.
In conclusion the modification of the parameters from period to period and
the influence exercised by phase oscillations is discussed.

INSTITUTION:

VLASOV, A.D.

Transverse oscillations in the dee system of the synchrocyclotron.
Radiotekh. i elektron.i no.7:903-909 Jl '56.   (MIRA 10:1)
                    (Synchrotron) (Cyclotron)